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Combat Crew

strategic air command

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MARCH 1980

Combat Crew

Magazine of the Strategic Air Command - 30th Year of Publication

GEN. RICHARD H. ELLIS
COMMANDER IN CHIEF, SAC

BRIG. GEN. RICHARD A. BURPEE
Inspector General

COL. RICHARD A. PATRICK
Director of Safety

STAFF

MAJ. STEPHEN J. MILLER
Editor

G. FRANCIS FARRELL
Associate Editor

SSgt. RICHARD L. WALDROOP
Art Editor

MARY JANE ABBOUD
Editorial Assistant

FLARE

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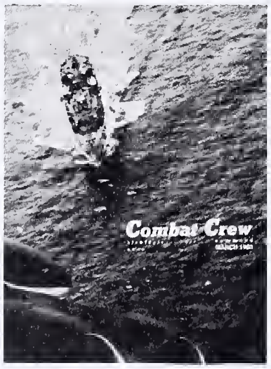

ON OUR COVER

The B-52H in its new contingency role, sea surveillance. For more see page 4.

SACRP 127-1 VOL. XXX NO. 3 MARCH 1980

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Subscriptions are available from The Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Price: $14.00 per year domestic, $17.50 if mailed to a foreign country, or $1.20 single copy. Authority to publish this periodical automatically expires on 26 January 1980, unless its continuance is authorized by the approving authority prior to that date. Contributions are encouraged as well as comments and criticisms. Direct correspondence with the Editor is authorized. Address correspondence to Editor, COMBAT CREW, Hq SAC/IGFC, Offutt AFB, Ne 68113

Major General Christopher S. Adams, Jr.
HQ SAC
Deputy Chief of Staff, Operations Plans

Finally! It is encouraging to see a headline touting SAC's ability to project power anywhere in the world the United States has vital national interests, and it is great to see SAC combat crews recognized for making our advertised potential a reality. We have not seen much of that since the latter days of Vietnam and today, more than ever before, our complex and troubled world is in need of that kind of up-front stabilizing influence.

Since World War II, overwhelming U.S. strategic superiority provided the nuclear "umbrella" on which national security policy depended — but such a shield can no longer be taken for granted. Over a year ago, SAC recognized that in this era of so-called "essential strategic equivalence," some of the old ways of doing things required adjusting.

United States national security policy since the 1950s has depended on the strategic umbrella of nuclear superiority to deter virtually all forms of aggression. Understandably, as a major contributor to U.S. strategic power, the SAC mission was shaped around that policy with primary emphasis on support for the Single Integrated Operational Plan (SIOP). Even today, the principal objective of strategic forces has not changed — our mission is still the deterrence of nuclear and conventional attacks or attempts at coercion under threat of attack against the U.S. or its allies. However, what is changing is a broadening of emphasis. Because the U.S. no longer retains overwhelming

"Soviet Fleet Touched By Long Arm of SAC"

—Omaha World Herald

strategic superiority, credible deterrence depends on convincing potential enemies that the U.S. has the ability and the will to effectively respond across the full range of the conflict spectrum. In short, our basic charter remains the same but now we view that charter from a significantly different perspective.

In order to have escalation control measures and the ability to respond at any conflict level, it is necessary to build a full range of military options that will provide our leadership, the National Command Authorities, the flexibility to respond in a timely and controlled manner. In addition to SIOP adjustments, this requires that non-SIOP options be developed to enhance the Command's ability to respond at the conventional level. The capability to execute contingency plans and procedures using strategic weapon systems — particularly the manned bomber and the tanker — greatly improves U.S. war-fighting capability. SAC forces can provide rapid, long-range force projection in both conventional and theater nuclear situations.

SAC's contingency mission then is to develop and maintain the capability to rapidly conduct worldwide conventional war-fighting operations as required in support of theater commanders at any level of conflict short of general nuclear war. Should the SIOP be executed, SAC forces involved in contingency operations would revert immediately to their preplanned mode.

Soon after assuming command in 1977, General Ellis challenged the SAC staff to review the Command's contingency readiness and to evaluate its capability to carry out that mission. Since that review, SAC has worked diligently to develop a dramatically different process to manage contingency and theater support requirements.

As you might imagine there were some growing pains as everyone strived to maintain full SIOP readiness while at the same time revitalizing and enhancing our contingency capability. The results of this effort were well worth the hard work everyone put forth. Some of you contributed directly to the planning development and many of you participated in the execution of contingency exercises and missions conducted in response to tasking.

This issue of Combat Crew features an article written by Majors Ken McCormick and John VanDeKamp that will give you an understanding of how staff action officers from all the functional areas in the Headquarters and throughout the Command interact in the contingency planning process. Even though there are computer tools to assist, you will quickly see that good, responsive contingency planning involves professionals at every level — from CINCSAC to you.

For your unit, is it SIOP or contingency? It is no longer a choice between the two. It is now the *challenge* to be ready to respond across the full range of options unique to the strategic bomber and tanker force. We must be prepared for both. With your continued dedication, SAC forces will continue to provide this nation with a highly dependable and effective deterrent force. ★ ★

Majors John Van de Kamp and Ken McCormick
HQ SAC/XOO

the CONTINGENCY CHALLENGE *is for real*

We enter the 1980s in a world of uneasiness. American hostages suffer lengthy detainment in Iran, Soviet troops ride through the towns and countryside of Afghanistan and the price of OPEC oil continues to skyrocket; we live in a world atmosphere unlike the days of the '70s. As Americans and members of the military, we have a proud history of meeting challenges to our security and that of the free world. We strive to meet the challenges by giving our President the most effective rapid response capability under the nuclear umbrella while operating below the nuclear threshold. We must be ready to carry out the President's directions if and when he decides that conventional military action is in our national interest.

As a SAC crewmember, you are the most important part of our conventional capability and our national security strategy. Because we rely heavily upon you, we want you to understand the whole process of contingency operations from planning and evaluation to employment tactics. Contingency planning and coordination at SAC Headquarters is the responsibility of the Consolidated Contingency Steering Group, or CCSG.

The CCSG was formed at the direction of the Vice-Commander-in-Chief, Lieutenant Genera

Lloyd R. Leavitt, Jr., to provide "more responsive crisis management, an improved planning capability, and closer coordination between problems."

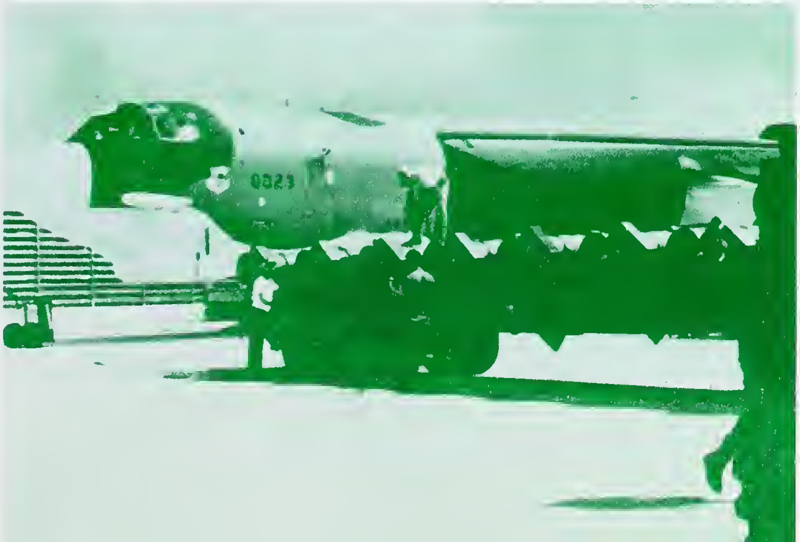
According to Colonel Charles A. (Robbie) Robertson, CCSG Chairman, "Contingency operations used to be scattered throughout the headquarters, and there was always some question of who had single responsibility in contingency matters. Now there is no question. If it deals with contingency, the CCSG will handle it."

As the focal point for contingency operations, the CCSG includes Operations Plans, Operations, Logistics, Plans, Intelligence, Data Processing, Reconnaissance, Inspector General, Engineering, Communications, Targeting, Budget, Public Affairs, and Personnel, but each CCSG member is still responsible to his respective Deputy Chief of Staff. While the Chairman, Vice Chairman, Col William Barnicoat, DOO, or the Alternate Chairman, Col Larry Bonderer, LGL may directly task member functions, any member has the authority to call a meeting and solicit the support of other members, as would the Chairman. This "two way street" streamlines SAC's capability to interact responsively in daily contingency operations and crisis action situations.

To enhance this responsiveness, "Contingency Country" was created. "Contingency Country" is a common location for Operations Plans, Operations, the Tanker Single Manager, and Logistics planners and implementors vital to contingency operations. The proximity of their offices in "Contingency Country" has markedly improved the command contingency responsiveness, interaction, and mission accomplishment effectiveness.

As Deputy Chief of Staff for Operations Plans, (XO), Major General Christopher S. Adams, Jr., ensures that the CCSG develops

Maj Gen Adams, Maj Gen Light, and key personnel discuss contingency requirements.

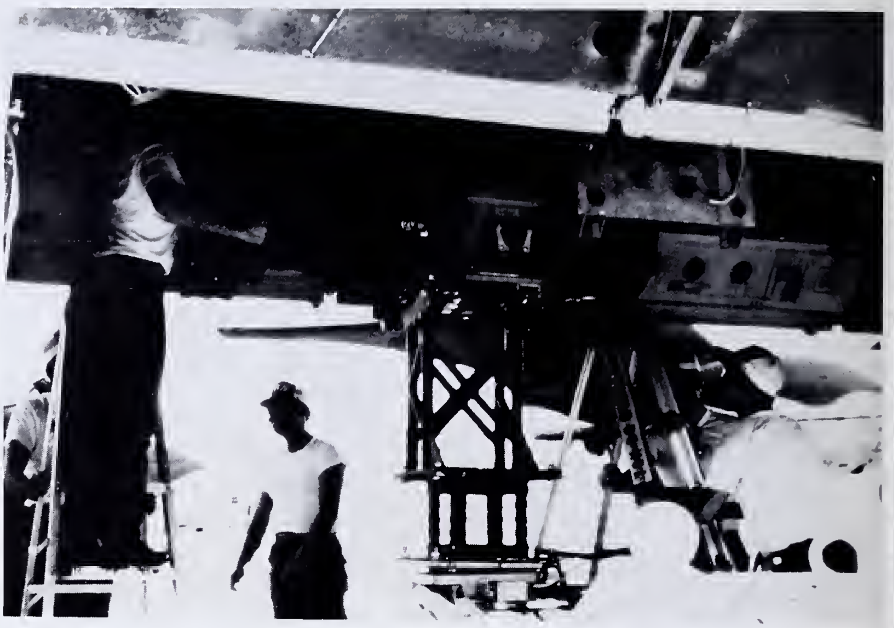


plans and procedures for rapid responses to worldwide crises that are tasked by the Joint Chiefs of Staff.

In the arena of crisis planning and employment, it is no secret that the CCSG is an extremely active organization. Recent planning and employment actions have centered on the development and exercise of SAC's rapid deployment capability, organic airlift, and modifications to SAC weapons systems, present and future. The CCSG and its mission, however, have not been restricted solely to SAC. We have interfaced with numerous DOD agencies to seek their combined assistance for a better planning and employment effort. Toward this end, SAC/XO hosted the Contingency Management Seminar and invited other key contingency planners and employers to enter our consolidated contingency processes. At this seminar, officials from the Joint Chiefs of Staff, Air Staff, Red Flag, Numbered Air Force, and units discussed how to best improve our planning and operational employment capabilities. General Ellis set the tone for the seminar by stating, "The consolidation of contingency planning within the headquarters and within the command is an example of what must be done DOD-wide." As we all know, however, discussions and plans must one day meet the test.

Last December that test was passed with flying colors. SAC's contingency capability took a major step forward with an Ellsworth deployment initiative, when 14 H-models and five tankers rapidly deployed to Guam as part of a SAC operational readiness evaluation. On a warm December afternoon, the first H-model, conventionally configured, crossed the hold line just ten hours after the unit was given a no-notice deployment warning order.

As a successful test, the Ellsworth initiative added vital significance to SAC contingency operations. At Ellsworth, new ground was broken as the B-52H was tested as a SAC conventional weapons system and its capabilities were included in the strategy and tactics of SAC conventional warfare.



While the H-model is new to contingency, contingency is not new to SAC. YOUNG TIGER, ARC LITE, and the LINEBACKER II bombing raids are proud moments in SAC's history. We have long produced contingency plans that give massive firepower to the theater commander. These plans, however, have not required specific unit tasking. For the most rapid response, however, our new plans are allowing each unit to know exactly what is required, particularly during ad hoc taskings — those that we should anticipate as the norm.

The national need for a Rapid Deployment Force is a reality which SAC is prepared to face with professionalism and determination. US forces must be prepared to react rapidly, on a worldwide basis, under no-notice, ad hoc conditions. You and your fellow crewmembers must be prepared to deploy to a forward location, if necessary, with minimum notice, land and be prepared to execute options which may include a show of force, sea surveillance, conventional bombing, or aerial minelaying.

The contingency *challenge* is for real. SAC has met the challenge of the past and stands ready to meet the demands of the '80s with strength and determination. According to Lt Gen James A. Hollingsworth, USA, Ret., Military Advisor to Senator Sam Nunn, Chairman of the Senate Armed Services Committee, "SAC has the unique capability for long range force projection of massive firepower." Our conventional capability must be ready to keep the level of warfare below the nuclear threshold. SAC Contingency Country is dedicated to this challenge and we look to you for the knowledge and professionalism to insure favorable success, be it in daily training or crisis action situations. As the winds of war swept the European continent, Winston Churchill called every Englishman to do his duty. With your dedication and our strong commitment to you, there's no question this tradition will be met and the SAC contingency force will rise to the challenge.

A SALUTE TO SAC'S FINEST FLYERS . . .

Proving themselves the "Best in SAC" during 1979 were the following Giant Voice 1979 Best Crew Award winners:

B-52

Receiving the trophies from Maj Gen Max B. Braillar, SAC Surgeon General, are Col Paul Maye, 92 BMW/DO, and Fairchild crew S-01 including: P-Capt David Capotosti, CP-Capt Carl Margraf, Jr., RN-Capt Charles Masonic, N-1/Lt Thomas Bowie, Jr., EW-Capt Gregory Winn, and G-MSgt Paul Black.

KC-135

Col Thomas G. Tobin, Commander, 380BMW, Plattsburgh AFB, and crew S-152; P-Capt Arthur Lichte, CP-Capt David Brown, N-Capt Karl Young, and BP-MSgt Foster Talley accepted the Best KC-135 Crew Award from Maj Gen Edward Dillon, Vice Commander, AFRES.

FB-111

Maj Gen Earl G. Peck, SAC/CS, presented the Best FB-111 Crew Award to Col Samuel Swart, Jr., Commander, 509 BMW, Pease AFB, and to crew S-01. The crewmembers were P-Capt George Watts and RN-Capt Larry Moore.

"It is with pleasure we report the results of our first month of BUSY PARTNER orientation; 34 wives from both the 906th AREFS and the 23d BMS were able to fly during this period. Simply put, the program is a total success." – Col Fredrick B. Jaicks, 5th BMW Deputy Commander for Operations.

Busy Partner

Capt Al Serrano
Capt Rich Orkin
5 BMW, Minot AFB

"**Outstanding! Fantastic! They should have done it years ago!**" Those are just a few of the comments made by wives participating in SAC's Busy Partner orientation flight program here at Minot AFB. During December, the 5th Bomb Wing arranged flights for 34 spouses of B-52 and KC-135 crewmembers. Many more wives are on the waiting list. Quoting Headquarters SAC, "The Busy Partner orientation is an opportunity to create and reinforce positive attitudes in the spouse about the unit, the mission and the crewmember's job, and to strengthen the bonds of friendship and goodwill." SAC was right, but Busy Partner is not simply an opportunity but, in the 5th BMW, a reality. The Busy Partner program has done more than any other single incentive program to enhance morale and promote positive feelings among crewmembers and, perhaps even more important, crewmember's wives.

SAC initiated the Busy Partner program after a thorough evaluation of a similar program in the Military Airlift Command. MAC's program, "Volant Spouse", permitted spouses of MAC crewmembers to accompany them on a routine training flight. Positive results for MAC created interest in a SAC program as part of the ongoing effort for aircrew enhancement in conjunction with the First View program. SAC

It's thumbs up for "Busy Partner."

Joyce Candella and Capt Charlie Shinkle getting a weather briefing.

then initiated the Busy Partner program on a trial basis. The command took several precautions to insure the safety of the spouses and to minimize interference with the unit's missions. Busy Partner flights aboard KC-135 aircraft are designated as Class 1 orientation flights and the following restrictions apply:

(1) *Restrictions as outlined in SACR 55-12, chapters 7 and 8 and SACR 55-51, chapters 5 and 6.*
(2) *Space available only.*
(3) *No additional cost to the government.*
(4) *Missions will not be generated specifically for this purpose.*
(5) *No training lost.*
(6) *Flights must originate and terminate at the same location.*
(7) *No more than ten participants on a single airplane.*

Announced implementation of the Busy Partner program by SAC was accompanied by numerous requests from wives and crewmembers to participate. In the 5th Bomb Wing the process of selecting suitable flights for this program began with the weekly 60-9 meeting. At that meeting Lt Col Ted Alexander, the 906th AREFS Operations Officer, using the criteria outlined in the preceding paragraph, reviewed the next week's scheduled flight activity. Standboard rides, pilot proficiency sorties, TDYs and missions with minimum interval takeoff criteria did not meet the restrictions for Busy Partner flights and were eliminated from consideration. The remaining flights for the week were balanced against requests for Busy Partner participation. Busy Partner spouses were scheduled so that they could fly with their respective spouses if possible. Furthermore, consideration was given to boarding just a few participants so that as much inflight activity as possible could be observed by each participant. The 5th Bomb Wing Commander, Colonel Pintard Dyer directed maximum support for the program and gave final approval to all Busy Partner sorties.

As can be imagined the actual rendezvous and air refueling operation generated the most excitement. Margie Faulk, wife of Lt Chuck Faulk (KC-135 navigator), said "I can't describe the amazement I felt when the bomber appeared behind us in the boom operator's window. As he move in to hookup I realized the enormous amount of training and skill it takes to make this happen." Wives of B-52 crewmembers, observing their husband's aircraft during aerial refueling were all surprised at how close together the two aircraft flew and were impreseed by the professionalism of both tanker and bomber aircrews. SrA Mike Yates, a boom

Continued on Page 14

CREW JUDGMENT

beyond the dash one

Capt Lewis Luyster
Capt James Sterzinger
410 BMW, K. I. Sawyer AFB

As a crewmember, you have probably faced at least one inflight emergency. Emergencies, of course, may vary in severity, but you can be sure contingencies are covered in section three of the Dash One.

Yes, section three, along with advice offered through a *Hotel Conference*, gives you, the pilot, a safe, effective method of dealing with most emergencies. Yet, this may not be enough. That old cliche "crew judgment" is also necessary, and no less an authority than the Dash One itself recognizes it: "This manual provides the best possible operating instructions under most circumstances, but it is a poor substitute for sound judgment."

What creates sound judgment? Among other things, it is the result of clear thinking and an understanding of the forces that act on an airplane. A bomber crew recently had an inflight emergency which while easily dealt with caused them to consider what happened and how they might have more effectively handled the problem.

The story really began the day before the flight in question. The aircraft, a B-52H, took off on a late afternoon training sortie. On the way home from low level, the crew was advised by the command post that the visibility was restricted at home base and they were diverted. The crew landed, and checked into the VOQs for crew rest. The next day, clearance was given for a 45 minute direct flight home. When the gear handle was raised after takeoff, the right tip gear showed an intermediate position. The right tip gear circuit breaker was pulled as a precaution, and the pilot continued the climb to FL 190.

After level off, the pilots began the "tip gear fails to retract" checklist. The appropriate circuit breakers were pulled, and the gear handle was put in the down position with the affected tip gear now showing a down indication. However, when the handle was put back up, the tip gear showed an intermediate position. All landing gear circuit breakers were reset, and the flight continued.

While approaching the IAF, the copilot, in the course of the "descent and landing" checklist, put the gear handle in the down position. All of the gear showed down and locked except for the right tip gear which now refused to do anything except show the intermediate position. This time, the "tip gear fails to extend" checklist was accomplished, but with as much success as the previous attempt to retract the gear. An emergency was declared, a Hotel Conference convened, and the crew began the "landing with partial gear" checklist.

In the event of one tip gear retracted, this checklist calls for the copilot to establish a 6000 pound differential between tanks one and four with the greater weight on the side of the extended tip gear. This was accomplished.

During the approach the latest winds were 90° from the runway heading at 10 knots, creating a direct crosswind from the right. Crosswind crab was applied — five degrees right.

The combination of the heavy wing and strong crosswinds made the approach somewhat more difficult than normal. On touchdown, the pilot applied lateral control to follow the checklist which says, "Hold wings level with the extended tip gear riding firmly on the runway." However, the left tip gear began to grind into the runway, and the control had to be released. Because a fighter with a low fuel had to land, the aircraft was taken to the end of the runway, quickly checked by maintenance, and gingerly steered onto the hammerhead where the engines were shut down. Maintenance inspection later showed that the right tip gear had a broken pin.

While not the sort of emergency which crewmembers will remember the rest of their lives, this particular incident taught them some important lessons. The first is that if mission requirements permit, it might be wise to keep a troublesome gear down if the proper down indication is obtained. The second, more specific lesson is that with this particular problem, the 6000 pound differential is more than enough to maintain the good tip gear on the ground — additional lateral control should only cautiously be applied since too much force on the tip gear could cause it to fail or punch through the wing.

The third lesson learned is perhaps the most important because it involves — yes — crew judgment. On this landing, the lighter right wing was higher than the left, and the wind from the right was able to get underneath it and increase the already considerable pressure on the left tip gear. A left crosswind, of course, would have a different effect on the aircraft while a direct headwind presumably would have minimal effect. The point is that the wind is an important consideration in even routine landings, and that all factors affecting flight must be taken into account, particularly during emergencies. So, in the final analysis, presence of mind, experience, and an understanding of the aircraft are as important to the solution of an emergency as is following the Dash One procedure.

WE STAND CORRECTED!

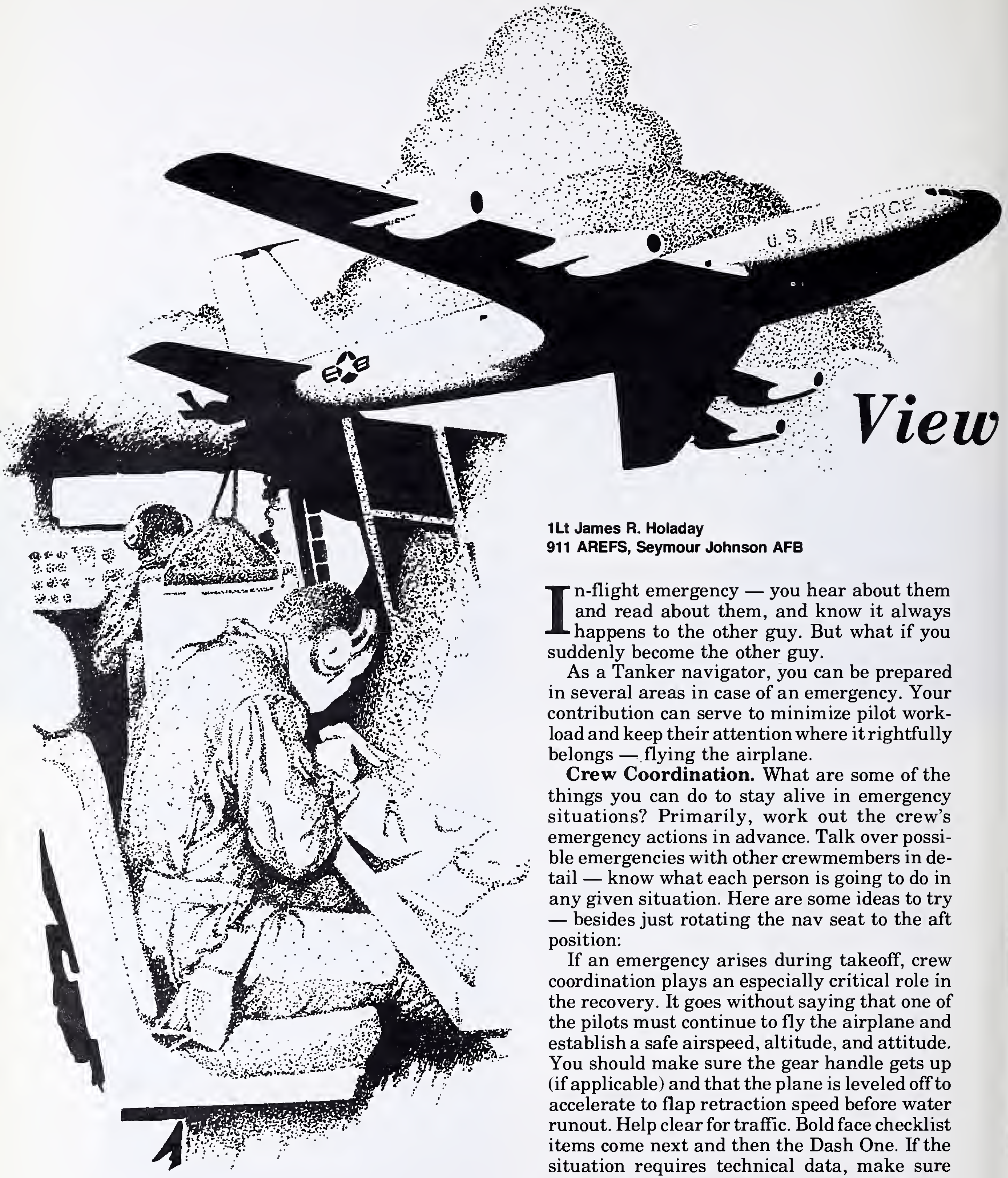
In our Jan 1980 issue on page 7 we incorrectly printed the Giant Voice 1979 Crumm and Bartsch Trophy winners. The following is the correct trophy winners and point totals:

Crumm Trophy

28 BMW	711 points
319 BMW	667 points
68 BMW	631 points

Bartsch Trophy

92 BMW	667 points
2 BMW	659 points
68 BMW	636 points



View

1Lt James R. Holaday
911 AREFS, Seymour Johnson AFB

In-flight emergency — you hear about them and read about them, and know it always happens to the other guy. But what if you suddenly become the other guy.

As a Tanker navigator, you can be prepared in several areas in case of an emergency. Your contribution can serve to minimize pilot workload and keep their attention where it rightfully belongs — flying the airplane.

Crew Coordination. What are some of the things you can do to stay alive in emergency situations? Primarily, work out the crew's emergency actions in advance. Talk over possible emergencies with other crewmembers in detail — know what each person is going to do in any given situation. Here are some ideas to try — besides just rotating the nav seat to the aft position:

If an emergency arises during takeoff, crew coordination plays an especially critical role in the recovery. It goes without saying that one of the pilots must continue to fly the airplane and establish a safe airspeed, altitude, and attitude. You should make sure the gear handle gets up (if applicable) and that the plane is leveled off to accelerate to flap retraction speed before water runout. Help clear for traffic. Bold face checklist items come next and then the Dash One. If the situation requires technical data, make sure someone gets into the book as soon as practical.

Have it arranged with your pilots that as soon as possible in any abnormal situation, they toggle down everything except interphone and you

from the Nav Seat

take responsibility for all aircraft communications. Advise the controlling agency of the problem and state your intentions. Get clearance back to home station, an appropriate landing site, or holding area depending on the seriousness of the situation. Make every effort to stay off the interphone or to avoid talking to the pilots unless absolutely necessary. Working these actions out on the ground beforehand will remove doubt and confusion, as well as save valuable time in the air.

If someone is occupying the jump seat, that person should assist in any way possible — referencing the flight manual, clearing for traffic, etc.

"Emergency fields are annotated on the chart." Fine, but you can go a little further than that. At all times during the flight, keep the closest emergency field in mind and its relative position to yours. Be ready to supply a rough heading to the field in case the pilot should elect to turn in that direction immediately. Having coordinates ready for the ID-390 would also help. This is not the time to say "stand by."

The navigator should also be prepared to provide routing to an emergency field or alternate landing base, as well as fuel requirements for a divert. Many bases distribute this information in local operating instructions. If so, have the applicable information conveniently located so you can get to it fast.

Gross Weight Reduction. In heavyweight emergency situations, the words "dump fuel" are music to everyone's ears. Have maps of holding and fuel dumping areas canned in advance. If fuel dumping is required, be prepared to supply the start and end times and coordinates of the dumping, amount dumped, altitude, outside air temperature, and the wind. If a reduction in fuel to landing weight is directed, monitor the aircraft position, doublecheck turns in holding, and back up the pilots with radar.

Approach and Landing. Again, charts of the local area including high and low altitude fixes are helpful in checking the approach using radar should communications or navigation aids fail. Monitor terrain clearance and advise the pilot immediately of any conflict.

Help look for the runway environment and continue to clear for other aircraft. As on any flight, stay on the altimeters: Altitude calls as usual — and watch the minimums.

If time and conditions permit, tell the command post what has happened and what you are going to do. Chances are they already know about your emergency through ARTCC. However, the command post may need additional information.

Even though the tanker navigator does not have responsibility for the aircraft controls, your inputs during an emergency can directly contribute to a safe recovery. By talking these things over with the crew on the ground, you can save time and worry in the air — you can save your life.

Busy Partner

Continued from Page 9

Marie Fisher and Joyce Candella observe preparation of last minute mission paperwork.

operator whose wife accompanied him on a recent sortie put it this way, "Ever since Kathy flew with us, she has been a lot more interested and involved in my Air Force job. That makes me feel good about myself and the Air Force."

After landing, the usual fatigue that marks the ride to maintenance debriefing was missing. In its place was a kind of pride and warmth that comes from sharing an experience like this with loved ones. The Busy Partner program is helping wives to understand their spouses' love of flying and gain appreciation for the dedication and professionalism required of a SAC Combat Crewmember. As Joyce Candella, wife of Lt John Candella (KC-135 co-pilot), remarked, "By being with the crew from the start to the finish of their mission, I can understand and appreciate the detailed planning and work that goes into every flight."

Lt Col Thomas Bennett, 906th AREFS Commander, sumed up the feelings of all of us in the 5th Bomb Wing, saying,

To understand the complexity of aircrew duties and gain an insight into what type of flight activity to expect, Busy Partner spouses were invited to participate in mission planning. Remember your first look at the TOs, regulations and associated directives? Imagine how the wives felt. Spouses were given a complete mission briefing with special emphasis on what to wear for comfort and warmth inflight. Aircrews made arrangements for extra headsets (have you ever spent four hours in a tanker without one?) and Y interphone cords, and, of course, inflight lunches. Passenger carrying considerations were given extra attention.

Lt Rob Fisher and Capt Charlie Shinkle briefing Marie Fisher and Joyce Candella on instrument approach procedures.

On mission day, Busy Partner spouses made the bus trip with the crew. This gave the participants a good idea of the number of agencies on base that support the flying units. At Base Operations, the spouses listened in on the weather briefing, were listed on the passenger manifest and got a quick final overview briefing on the sortie. At the airplane, the boom operator gave a safety briefing and showed everyone the location and operation of safety related equipment. The wives were then invited to monitor communications and observe the aircrew complete the preflight. This was a unique experience for most of the wives whose exposure to preflight has been limited to arriving at a commercial airport, purchasing a ticket and boarding an aircraft.

With everyone strapped in, the long ground roll and rotation signaled the start of the inflight portion of the journey. Several wives were

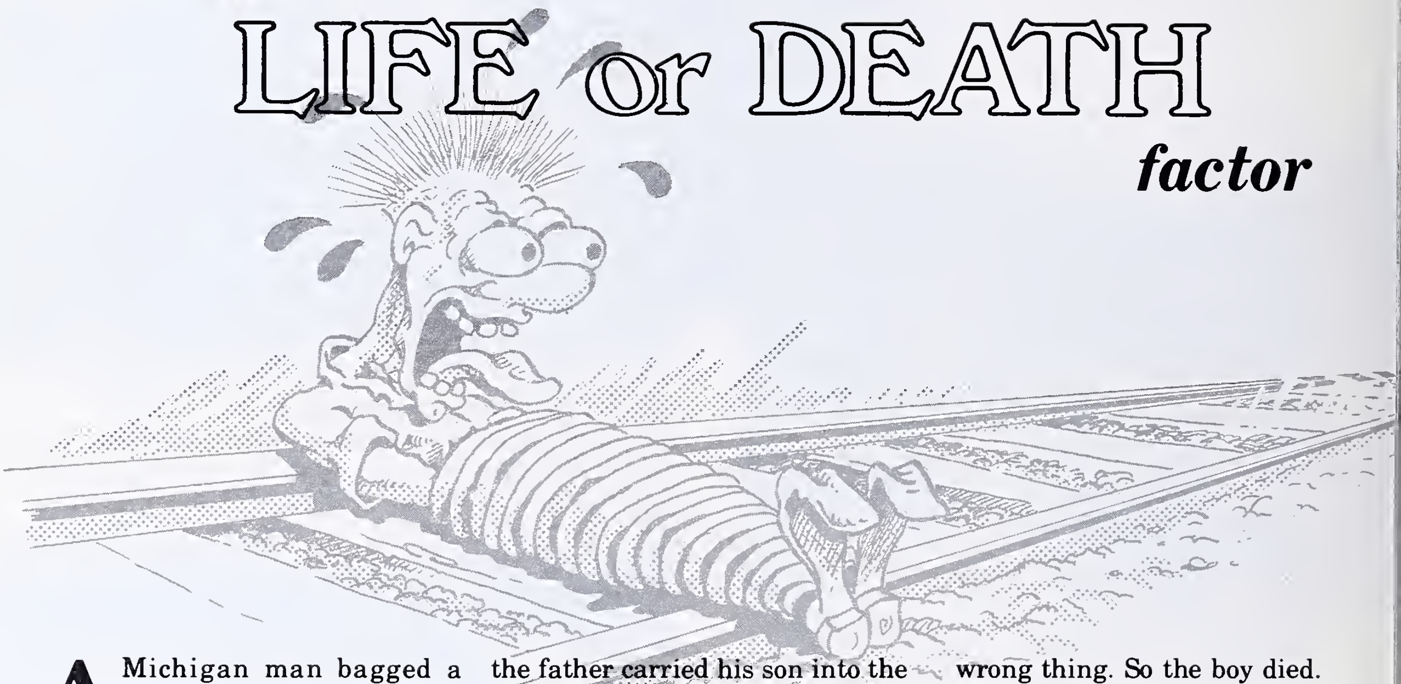
SSgt Thomas Kuehn briefing Marie Fisher, Betty Wisniewski, and Joyce Candella on the proper use of a passenger oxygen kit.

amazed at the number of radios to be monitored and the complexity of departure instructions. A frequent question was "How do you tell who is talking to you?"

Busy Partner flights have been enthusiastically received by the wives and they have picked up enough of the flavor of flying and the jargon to participate in the endless "war stories" that inevitably take place among their husbands at every social event. The wives now have some war stories of their own. A more intangible part of the program has been the increased self-esteem of the crewmembers as a result of the presence of their spouses on a flight. What crewmembers often regard as routine or even boring portions of the mission sequence, the spouses saw in an entirely different light by perceiving the knowledge, skill and professionalism embodied in a fully qualified flight crew. It takes someone external to our profession to point out to us just how skilled and important to our nation we really are.

Three wives look on as Lt Bryan Lillegard explains navigation equipment.

time can be a LIFE or DEATH *factor*



A Michigan man bagged a deer on the second day of the hunting season and took it home to dress it. His seven-year-old son stood by and watched as the man hung the deer in the garage and started to work on it. The boy picked up a skinning knife to help, but the blade slipped on the tough hide and slashed deep into the youngster's knee.

The man put his son in the car and headed for the nearest doctor. The 14 miles seemed to stretch on forever. When he finally arrived, the office was empty; everyone had gone home for the day.

Frantic now, the father pushed the accelerator to the floor and sped to the nearest hospital, half an hour away. His son was no longer crying, but lay quiet on the seat beside him.

At last he pulled up at the hospital. A nurse opened the door, and the father carried his son into the emergency room and laid him on the table. Relieved that help was finally at hand, the exhausted man dropped into a chair in the waiting room. At that moment the doctor appeared in the doorway. He just stood there, shaking his head. The father was paralyzed with fear.

"How is he?" he asked.

"Your son was dead on arrival," the doctor replied. "He bled to death along the way."

The distraught father probably could have saved his son's life just by applying a pad or gauze or a clean handkerchief to the cut, wrapping the knee firmly with a strip of cloth, and having the boy lie down with his leg propped up.

But like so many of us, he felt helpless in the face of a medical emergency — ignorant of what to do, or afraid that he would do the wrong thing. So the boy died.

Many of us have been led to believe that saving lives is a complex task that should be left to the medical profession. But this is not always the case.

In some emergencies, time counts more than all the medical expertise in the world. Life slips away as the seconds pass. The ambulance will never make it in time. A life is in your hands and you must act!

Act Promply

"Promptness rather than professional expertise matters most," noted a recent editorial in the *Journal of the Amercian Medical Association*. The *Journal* cited a Norwegian study of 631 persons who suffered cardiac arrest. Most of the victims received no treatment until the ambulance arrived (average time: eight minutes). Only eight percent survived. But some of the victims were resuscitated by bystanders, and in this group 36 percent survived.

When resuscitation was started in the first minute after the heart stopped, the survival rate shot up to 61%. Results like those have led some experts to predict that 100,000 lives could be saved in the United States each year if enough people could apply CPR.

The publicity about so-called "Good Samaritan" actions has made some people afraid to act for fear of being sued. Yet a recent study failed to turned up a single case in which a layman was found liable for applying CPR. Common law doctrines and Good Samaritan statues protect the bystander who makes a sincere effort to give first aid in an emergency.

A Vermont law actually requires the bystander to give "reasonable assistance" to a victim "exposed to grave physical harm." In West Germany, motorists are required to carry first-aid kits in their cars, and a person who applies for a driver's license must present a certificate showing that he has received instruction in first aid.

Everyone should get first aid training, especially for CPR, which requires a little practice on a special dummy. First aid courses take only a few hours and cost little or nothing. Check with your local Heart Association, Red Cross, or your employer.

But just because you haven't had formal training doesn't mean you can't help in an emergency. You can learn enough to save a life just by reading the following instructions.

When Breathing Stops

This may be caused by suffocation, immersion in water, choking, electric shock, or other emergencies. The remedy is mouth-to-mouth breathing, and it's a lot simpler than you have thought. All you do is clear the air passage and breathe into the mouth.

With the victim lying on his back, check his mouth and clear out any foreign matter. Then put your hand under his neck and lift it gently, tilting his head back. This will prevent his tongue from blocking the air passage, and may be enough to restore breathing with no further assistance. (But don't move the head or neck if you suspect spine injury.)

Now just cover his mouth with yours and breathe in, a few quick breaths at first, and then your normal rate (about once every four or five seconds for adults, a little faster for children). Pinch the nostrils shut so that air you breathe won't go out his nose. Remove your mouth after each breath to let the victim exhale.

Drowning

You don't have to be an expert swimmer to save a person from drowning. Just throw him something that floats, such as a life preserver, a spare tire, a cooler chest, a beach ball, or a piece of wood. Or throw him a rope and pull him in.

If you're close enough, you may be able to throw him one end of a shirt or coat, while you hold onto the other end. But don't get close enough for him to grab you unless you've had training in water rescue.

Severe Bleeding

To stop a person from bleeding to death, apply direct pressure over the wound. Your bare hand will do. A clean handkerchief or other cloth would be better, because your hand will have to be removed eventually, while the cloth could be left in place to aid clotting. A clean piece of gauze wrapped in a firm bandage would be best, since the victim can then be moved more easily.

Elevating the injury above the level of the heart may help. The flow of blood to the wound will be slowed because it will be moving against gravity.

Choking

Choking is often confused with a heart attack. In a severe case there is no coughing; the victim just turns blue and collapses. But you can usually tell the difference because a choking victim cannot speak at all, while a heart attack victim generally can.

Wait a few seconds to see if the victim's automatic reflexes can dislodge the object that is blocking the windpipe. If not, you should act quickly to try to force the object out. Stand behind the victim, put your arms around him and press your fist into his abdomen just below the ribs. Grasp your fist in the other hand, and squeeze inward and upward quickly. The object in the windpipe should pop out like a cork from a champagne bottle.

If the victim is lying on his back you can achieve the same effect by placing one hand over the other on his abdomen just above the navel and pressing quickly upward with the weight of your body.

Burns

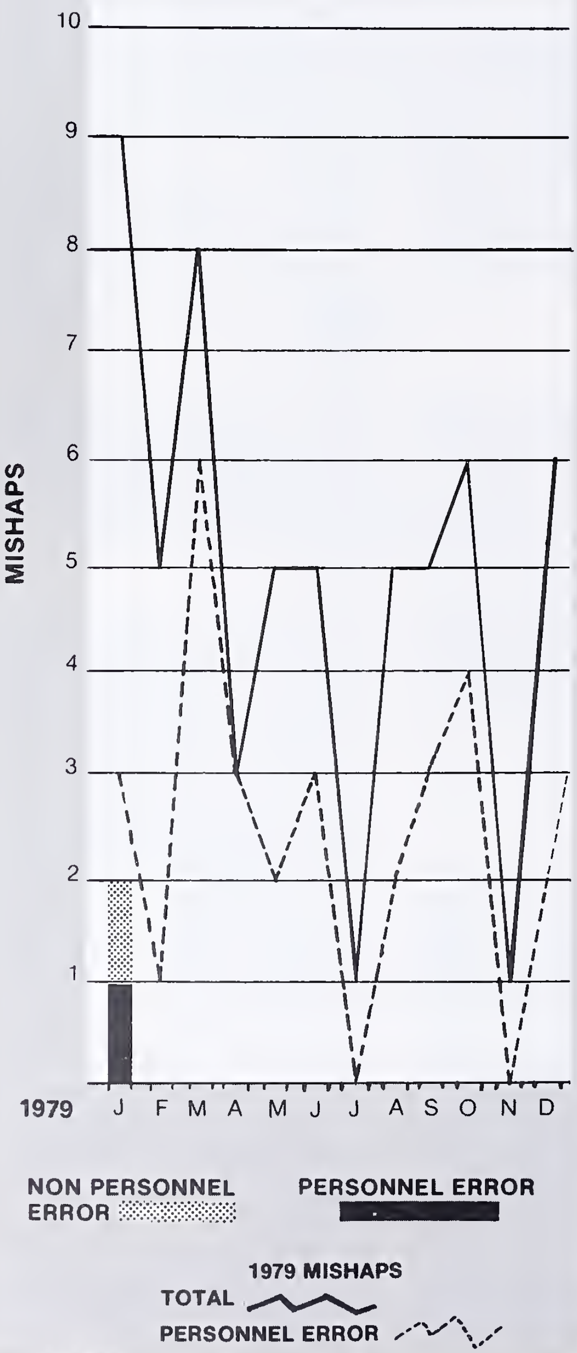
Burned skin is like a roast in the oven: it keeps cooking after the heat is removed. A burn that affects only the top layers of skin at first may penetrate deeper and destroy the full thickness of the tissue, exposing the internal organs to life-threatening infection.

The proper treatment is to immerse the burned area immediately in cold water and hold it there until the heat is dissipated, unless the skin has been completely destroyed. In that case, just cover it with a clean sheet or other cloth.

As you can see, first aid need not be complicated. The biggest obstacle may be your fear and nervousness. That's natural. Just remember that your goal is not to cure the victim, but to keep him alive until expert help is provided. When time is crucial, your simple action may save a life. — Al Finch
Thanks to Aerospace Newsletter.

Missile Mishap Report

DOD CLASS A, B and C



Class C Mishap Titan II — Butterfly Valve Lock Secondary Lock Detonator Firing

During inertial guidance system runup, the lock power circuit breaker was reset, the SUM check fault, operate OK and replace battery lights illuminated on the VCL control. The MSUM check fault and maintenance safe lights illuminated at the unit command post. The combat crew began maintenance safing procedures. When the outer cover was removed after required time out, it was discovered that the BVL secondary lock detonators had fired. Detonators were removed and replaced. An investigation is currently underway to determine the cause of the unprogrammed detonator firing.

Water Damage to Electrical Filter Assembly.

A launch facility experienced a problem involving LF emergency batteries. An electromechanical team was dispatched and discovered extensive moisture on the walls and floor of the electrical surge arrester room. The LF was shut down to dry out the room. Standing water in the C phase section inside the electrical filter assembly was in evidence. Severe corrosion was also found on the lowest filter components in the B phase section. Technical engineers decided all eight filter components in the B phase section should be replaced as well as those in C section. An undetermined amount of water seeped through the input conduit at the top of the assembly eventually destroyed the casing of the C-5 capacitor in the C phase section allowing water to short out the capacitor causing extensive arcing.

Power Supply and Motor Generator Damage.

Commercial power failed during a major snowstorm. This was followed by standby power system failure. Due to the storm, maintenance personnel were unable to respond. When emergency power failed, a maintenance team was helicoptered to the site. They found that the motor generator, a battery charger, three LF emergency batteries and all four diesel start batteries were damaged. All components except the motor generator were replaced. Investigation revealed the failure of the four diesel batteries prevented the standby power system from operating properly. Weather conditions at the time and power problems being experienced at other sites delayed maintenance response.

Missile Fin Damage.

A download of an internal AGM 69 rotary launcher was in progress. The number four loading crewmember who was observing the upward movement of the ADU-317/E adapter moved to obtain a hand tool. When his attention was diverted, the adapter contacted the fin and fin platform of one missile. The operation was immediately stopped. The damaged missile was unloaded and the crewmember decertified. Cost and exact description of damage will be forthcoming. A momentary distraction on the part of a crewmember contributed to this mishap.

Power and Communication Cable Damage.

A missile maintenance team was installing the workcage support structure at a launch facility at Vandenberg. Upon completing installation, power was applied and the elevator access door was closed to verify limit switch activation. One light on the distribution box did not illuminate so the elevator access door was opened and reclosed. At this time faulty light indications still existed and a crackling noise was heard. Power was removed and the elevator access door opened. It was found that the roller cable had been caught in the C rail of the door seam and was cut. The cable was replaced. Team members involved were not familiar with Vandenberg's peculiar LFs that have a recessed C rail whereas operational sites have the rail protruding from the launch tube liner. In addition, the launch tube access doors and diving board were still secured and sealed with aerospace solvent which prevented examination of cable during elevator access door closing. It is important that all maintenance crews be thoroughly familiar with Vandenberg's unique items of equipment prior to operations at this base.

DEBRIEF

MINUTEMAN MANAGERS

SAC has a continuing need for personnel to fill Minuteman missile facility manager jobs, according to HQ SAC missile and personnel officials.

Sergeants (E-4) through Master Sergeant (E-7) not on overseas freezes, can apply for duty at F. E. Warren AFB, Mont.; Minot AFB, N.D.; and Grand Forks AFB, N.D.

To help obtain volunteers and create job continuity, facility manager tours have been stabilized at three years. At the end of three years, personnel are returned to duty in their primary Air Force specialty codes unless voluntary extensions are approved. A close look at the duties of facility managers reveals the need for experienced, technically competent and people-oriented individuals.

The facility manager must be able to relate to people. While at the launch control facility (LCF) they operate with minimum supervision. This requires an individual with enough self-discipline to take the initiative to get the job done. Additionally, as a facility manager, he or she must oversee people and activities at the LCF. Good supervisory qualities must be exercised for his/her performance will have an impact on morale and subsequent performance of these people.

The LCFs, located 25 to 150 miles from a main base, require facility managers to be jacks-of-all-trades. Sometimes they are called upon to be weathermen, air conditioning specialists, building custodians, water treatment specialists or supply accountants.

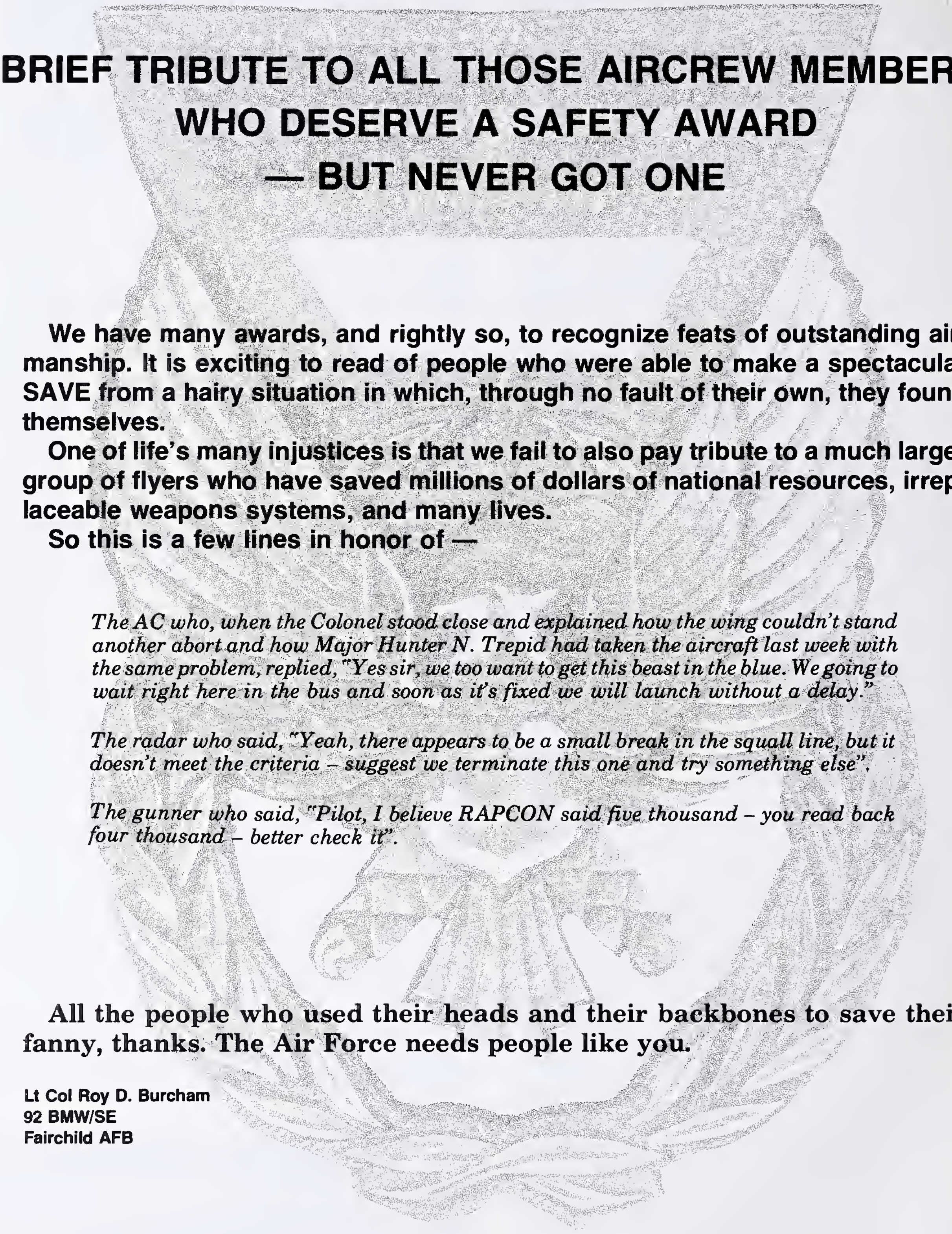
Information on eligibility and procedures for submitting application for facility manager duty is available at Personnel Customer Service Centers.

E-4B

SAC received its first E-4B Airborne Command Post from AFSC in a brief ceremony aboard the aircraft. A sister ship to three E-4A aircraft currently used by SAC, the E-4B is an improved version of the National Emergency Airborne Command Post which provides an alternative headquarters for the National Command Authorities and the Joint Chiefs of Staff in time of threat or during an actual attack.

In addition to the NEACP role, the new E-4B has a second mission. With the addition of airborne launch control system equipment that provides the capability to launch ground-based intercontinental Minuteman missiles, the E-4B may be used as the SAC Airborne Command Post. This version provides a command, control and communications link between the National Command Authorities and SAC's aircraft and missile forces.

BRIEF TRIBUTE TO ALL THOSE AIRCREW MEMBERS WHO DESERVE A SAFETY AWARD — BUT NEVER GOT ONE



We have many awards, and rightly so, to recognize feats of outstanding airmanship. It is exciting to read of people who were able to make a spectacular SAVE from a hairy situation in which, through no fault of their own, they found themselves.

One of life's many injustices is that we fail to also pay tribute to a much larger group of flyers who have saved millions of dollars of national resources, irreplaceable weapons systems, and many lives.

So this is a few lines in honor of —

The AC who, when the Colonel stood close and explained how the wing couldn't stand another abort and how Major Hunter N. Trepid had taken the aircraft last week with the same problem, replied, "Yes sir, we too want to get this beast in the blue. We going to wait right here in the bus and soon as it's fixed we will launch without a delay."

The radar who said, "Yeah, there appears to be a small break in the squall line, but it doesn't meet the criteria – suggest we terminate this one and try something else".

The gunner who said, "Pilot, I believe RAPCON said five thousand – you read back four thousand – better check it".

All the people who used their heads and their backbones to save their fanny, thanks. The Air Force needs people like you.

Lt Col Roy D. Burcham
92 BMW/SE
Fairchild AFB

OF WORDS AND MEANINGS

Maj Richard Szafranski
HQ SAC

Our language is filled with words whose history or meaning has been obscured by time. Did you know, for example, that our word "buckaroo" is a corruption of the Spanish word "vaquero," both of which mean "cowboy"? The jargon of crew members is also filled with rich expressions whose meaning has altered over the years. We say "bought the farm" as a euphemism for "crashed" or "met a violent end." The expression goes back to the early days of flying when aircraft mishaps were common. In those days, if you impacted an airplane on private, crop-producing or formerly crop-producing land, the government usually had to settle the claim for its liability by "buying the farm."

Nowadays, one of the words you hear frequently around the squadron is "reliable." Like: "Old Sweeney, he's always reliable," or "Poor Dennis, he hasn't been reliable two flights in a row." To us "reliable means meeting the objective (generally) or employing countermeasures or getting a good weapon or terminating a navigation leg acceptably close to a target (specifically). We have Reliability Panels that seek to investigate the causes of bad ECM, bad weapons and bad navigation legs (I wonder why they don't call them Unreliability Panels?) And we all know that it is not desirable to be "unreliable."

Yet, in our heart of hearts we also believe that aboslute reliability is impossible. We accept that sometime we will have unreliable activity, but we fervently pray that it won't be on a check ride or on an ORI. I know you accept that last statement as true, but I would like to add another dimension to it by going back to the origins of the word "reliable."

The word comes from "rely" which means to trust, to depend on, or to have confidence that a person or object will perform as expected. In English "rely" is derived from the Middle English "relien" which means "to rally." In Latin, from "religare" which means "to bind together." The word "religion" has the same Latin root as the word "rely."

Being reliable, then, really means that folks religiously trust you, rally to you, and depend on you to perform as expected: to put down a threat, to get a weapon on target, or to end a nav leg when and where you should. That they become hostile on those rare occasions when you don't, when you're unreliable, is evidence that trusting relationship truly binds together the operator and the supervisor. But more than that.

Just as "reliable" is a verbal symbol for trust, so are check rides and ORIs symbolic of something else — something bigger. In the last analysis, your (yes, your) reliability binds the squadron, wing, and command together. It even binds this country and our foreign policy together. Your reliability is crucial to every person in the United States and free world.

So before you go fly your next training mission, or check ride, or ORI, or war, think about it. We rely on you.

About the Author —
Maj Szafranski was a former B-52H pilot assigned to the 379 BMW, Wurtsmith AFB. He is currently performing duty at HQSAC.

CFIC Corner

BEING PREPARED

ATTENTION: All Crew Specialties

TSgt Larry D. Williams
Central Flight Instructors Course
Castle AFB, CA 95342

What makes a good instructor? Have you ever asked yourself this question, or even considered it? Well, to answer the question, a good instructor has the knowledge, ability and attitude that influences the learning of his students. Now consider this, do you think you will acquire these characteristics simply by attending CFIC? I think not. However, we can guide you in the proper development of these characteristics. But you first must have the desire to strive toward the goal prior to your arrival and after your graduation.

The purpose of this article is to assist you in preparing to attend the CFIC course.

To start with, review AFM 50-62, Principles and Techniques of Instruction. Another good resource is 4235 ISD/OTSL Study Guide 12005, A Guide to Effective Instruction and Evaluation. There is another resource available, ECI course, Principles and Techniques of Instruction 7521A. Any one of these resources will assist you in understanding the learning process and prepare you for your work here. Consider this; your job will be to teach crew members how to perform their duties in the aircraft. This is a tougher job than it used to be. Experience levels are the lowest ever and flying time is scarce. How well the new crewmember learns his skill will depend on you, so prepare yourself and start early! You should already have the necessary knowledge in your particular specialty, but as an instructor you'll need to increase your awareness of the other crewmember's specialties, aircraft systems such as air conditioning, oxygen, and regulations, and operational requirements. You will be asked questions related to these areas and its a little embarrassing when you're not prepared for them. Also, you don't want to put out wrong information by not understanding it yourself.

Another important way to start preparing is to act as an instructor during trainer missions. However, both you and your instructor should take extra time with your pre-brief so that both of you completely understand the roles you will be required to maintain.

A weak area we continually observe is knowledge of regulations and manuals. You may think I'm repeating myself, but thats how important the subject is.

Have you ever heard this before? Instructor: "it's in the reg," Student: "But could you be a little more specific?" Instructor: "It doesn't matter, just take my word for it."

From this conversation we can draw two conclusions. One, the instructor didn't have a thorough knowledge of the regulation and two, he didn't want to take the time to work with the student. Let's look at the first conclusion. If you're not prepared to discuss the contents of the different regulations and manuals you may as well give up instructing. Don't think you can "bone up" on them when the subject comes up, its too late then. Remember, the foundation for a SAC instructor is Regs and Manuals. They control everything that you and the student do. You must be prepared to relate that importance to your student. We recommend you take your instructor open book exam at Standboard *prior* to attending CFIC. This will increase your knowledge of the publications you will be working with while at CFIC and as a SAC instructor.

I know this sounds like a lot of work, and it is. It's entirely up to you to get started early. To do that you must be in the right frame of mind. Another way of expressing this frame of mind is attitude.

Attitude is very important because of the tremendous influence it has on those with whom you come in contact with. Therefore, it is essential that you project a positive attitude at all times. Let's delve deeper and find out where a positive attitude comes from and what causes it.

There is an inner drive, or desire, which causes your attitude to be positive or negative. Outside factors also influence your attitude. The drive which influences your attitude may be a desire to raise your self esteem, or to achieve self actualization in your job. You may recognize this as Maslow's hierachy of needs. This is what influences your attitudes and we'll call it motivation. Now you're asking what this has to do with preparing for CFIC? Well, I'm glad you asked. The whole reason for your doing anything stems from motivation. In preparing for CFIC, different situations may cause motivational problems.

As a future instructor, you will be confronted with several motivational problems, so why not practice looking for them. While you read this article you may be asking yourself, "is it necessary for me to put forth this kind of effort before I go to CFIC?" Well you've just developed an attitude which has caused a motivational problem.

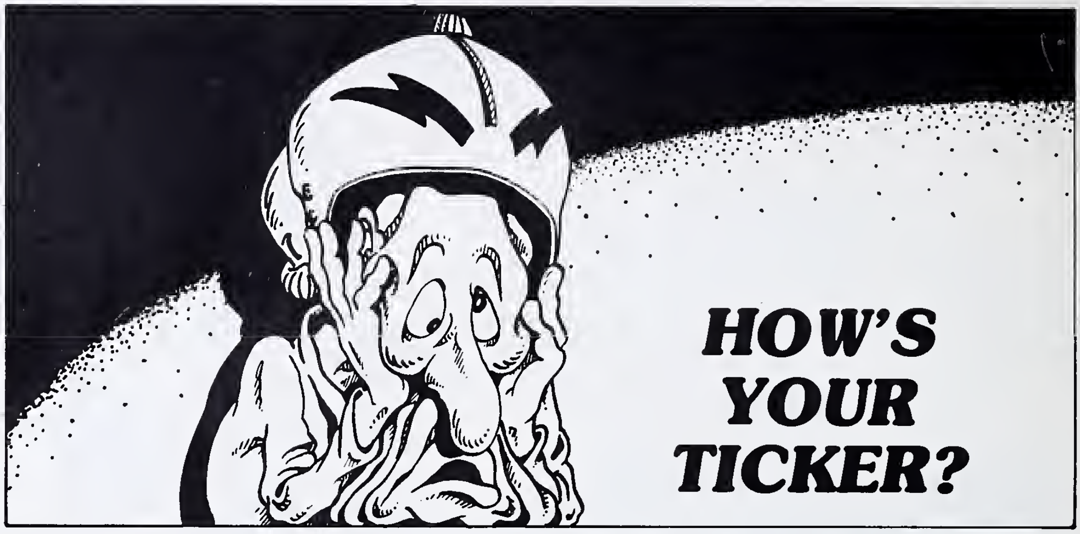
Let me point out some problems which you may or may not relate to. On your last flight, did you really want to fly? Lets say you did. Why? What made you want to fly? Could it be that on that mission someone was flying with you and it was your chance to prove your worth?

What if you didn't want to fly that sortie? What were the reasons? Last flight before alert? Going to miss a party with your spouse? The baby is sick? Whatever the reason, attitudes are influenced and motivational problems arise. You should recognize them and deal with them before they get out of hand. What about going to CFIC? Do you have a desire to attend or were you told you were the only one available? How will that effect your attitude? What motivational problems will you be faced with?

The first step in overcoming these problems is to recognize they exist and attempt to discover the cause. Once this is done you can determine whether or not they will affect your performance. We all have experienced a time in our lives when nothing seems to go right for us. Like it or not, it has affected our performance on the job. As long as human beings remain human this will happen. Our only recourse is to analyze what is taking place and attempt to gain control of the factors that put us in the situation to begin with.

I hope this article will help you in your preparation for CFIC. We are all looking forward to meeting you. Fly the aircraft!

OPS HAZARDS



HOW'S YOUR TICKER?

The physical condition of a pilot who was killed in a crash may have played a role in the accident, the National Transportation Safety Board reported.

The accident occurred while the pilot was attempting a nighttime instrument landing approach. The aircraft made a steep descent from above the ILS glide path at the outer marker, continued through the glide path, and then descended well below decision height. The aircraft struck a wooded area about one mile and a half from the approach end of the runway. The pilot was killed. The copilot and eight passengers were injured.

The board determined that the probable cause of the accident was "... the failure of the flight crew to recognize and react in a timely manner to the gross deviation from acceptable approach parameters resulting in a continuation of the descent well below decision height during a precision approach without visual contact with the runway environment."

Although the board was unable to determine conclusively the reason for the failure to recognize and react to the gross deviation, it believed that the degraded physiological condition of the pilot seriously impaired his performance.

Medical records showed the pilot had undergone a sympathectomy in 1963, which is a medical operation designed to reduce hypertension. A military pilot at the time, he was removed from flying duty. In 1964, the pilot's second class medical certificate was denied by the FAA Regional Flight Surgeon after a physical examination revealed persistent hypertension requiring drugs for its control. But the certificate was reissued later in 1964 when the pilot's blood pressure returned to normal levels. However, the FAA did require the pilot to undergo close cardiovascular monitoring.

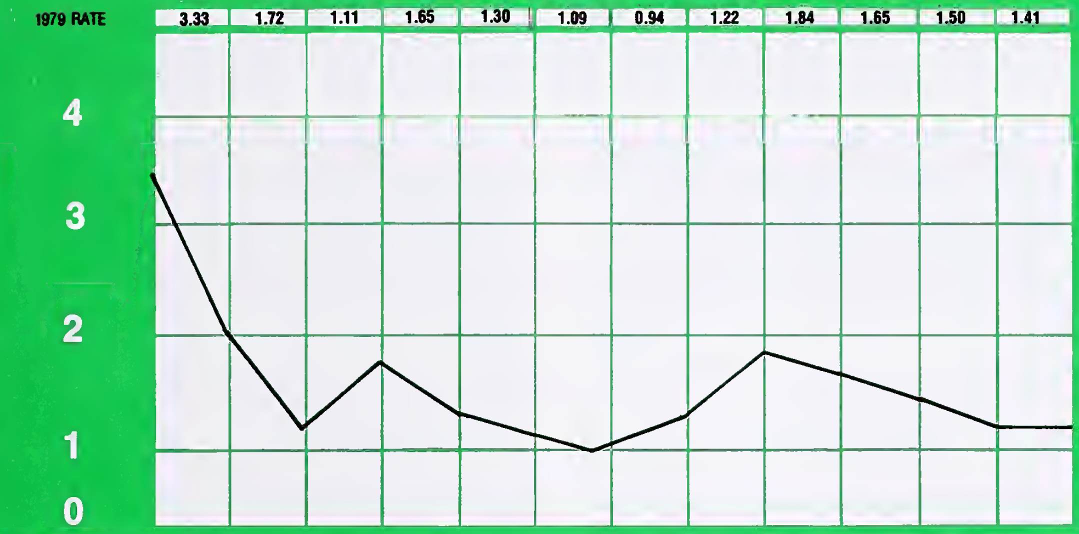
In 1968 high blood pressure readings again resulted in a denial of a medical certificate. But in 1970 a second class medical certificate was issued by an Aviation Medical Examiner (AME). In 1971, the pilot was issued a first class medical certificate by the same AME, who continued at six month intervals to issue first class medical certificates to the pilot until the time of the accident. In the last application filed by the pilot for a medical certificate, he indicated that he had never been denied a medical certificate, nor was he using any type of medication. The board's investigation revealed that he had been taking drugs to control both hypertension and gout. In addition, an autopsy performed on the pilot revealed a well-healed myocardial infarction and showed an occlusion of one of his coronary arteries, neither of which had been detected by the FAA's required cardiovascular examination.

The board said medical records indicated that the pilot may have had a predisposition toward hypoglycemia, which is low blood sugar. Hypoglycemia can produce symptoms such as a subtle mental confusion. The condition would have been aggravated by the fact that the pilot's only known food intake during his 14-hour work day was a piece of pastry and a cup of coffee. Witnesses also observed that the pilot had become visibly irritated when informed after completing his scheduled work day that he would be required to fly two additional flights.

The copilot testified that he made all of the required altitude callouts during the descent except the "no contact" call out. Because the pilot rarely acknowledged calls, this lack of response probably would not have alerted the copilot to any physiological incapacitation of the pilot. However, the copilot should have been concerned by the aircraft's steep glidepath, excessive descent rate, and high airspeed. These three factors limited the amount of time available to the copilot to react once the flight descended through the decision height.

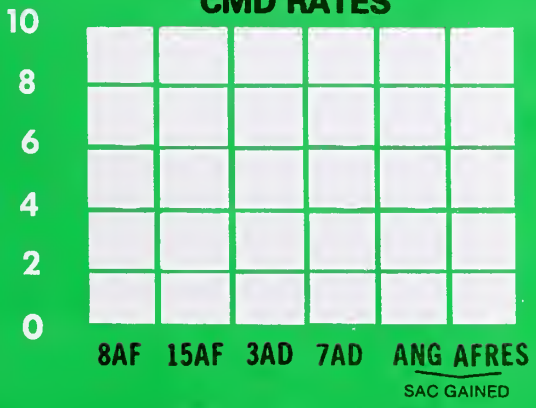
1980 Flying Safety Rate

SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)



MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1979	1	0	0	1	0	0	0	1	2	0	0	0
1980	0	0										

1980 SUBORDINATE CMD RATES



MISHAP STATUS

LEGEND ⁀ = 1978 RATE (SAC)
+ = ANG
* = AFRES

BIG
INSTRUMENT

Wind Shear for the Line Pilot

Captain Tome Walters
1CEVG Instrument Division
Barksdale AFB, Louisiana

This article begins a four part series on wind shear in the Big Instrument. If past experience with wind shear articles has left you concerned, but confused, we understand. We have shared those same feelings.

Wind shear is a technical subject. But final approach is not the place for a technical analysis. The challenge then is to translate wind shear into pilot language and pilot actions. That is the goal of these articles.

To begin with, let's put wind shear into proper perspective.

- Your chances of facing a "killer" wind shear are about 1 in 15 flying careers as an AF pilot. If you don't pay close attention to every word we say about wind shear . . . you will probably live, anyway.
- You fly through small shears or wind changes on most approaches. You, your instructor, or evaluator have often assumed poor pilot technique caused an airspeed or glide path control problem. In fact, wind changes were often the culprit.
- Wind shears are common. Severe shears are less common. If you understand how to handle the severe shear, you can use the same techniques to fly a better approach day in and day out.
- Wind shear is technical, but not all that complex. There are only two types of shear situations for pilot purposes: increasing headwind and decreasing headwind. There is a simple technique a pilot can use that tells which shear situation he/she faces: indicated airspeed/groundspeed comparison.

By now, we hope you are beginning to get some ideas on "where we're coming from" on this wind shear topic. You've seen the word "technical" a couple of times. That means some numbers are involved. If you are a nontechnical degree type, don't worry. The numbers are well within your realm of experience as a pilot. Even if you don't feel completely comfortable with the numbers, you will be able to understand the bottom line: what is this shear doing to my flying machine and what am I supposed to do?

This part of the wind shear series will discuss weather conditions that spawn a shear. Part two will explain how a shear affects an aircraft. Part three will explain the two types of shear in detail: the increasing headwind and the decreasing headwind. Finally, part four will explain how to use the indicated airspeed/groundspeed comparison to solve the shear problem.

WEATHER CONDITIONS THAT MAY CAUSE A WIND SHEAR

The weather briefing is an excellent opportunity to first consider the possibility of a wind shear. That is one of many things you are busy doing, but it doesn't have to take much of your time. It takes only a second to recognize a weather clue for wind shear, make a mental note, and file it away for the appropriate phase of flight: takeoff or landing. What are those weather clues? Well, some you already know. You may not be as familiar with others.

THUNDERSTORMS — It should come as no surprise that wind shear is one potential problem that goes with a thunderstorm. Thunderstorms are complex. The updrafts and downdrafts can cause you to contend with both a headwind and a tailwind shear in a short distance. (Fig 1) Remember these key points about thunderstorm shears:

- The gust front can extend 5-10 miles ahead of the storm.
- A shear can exist at pattern altitudes BEFORE the gusty surface winds reach the runway.

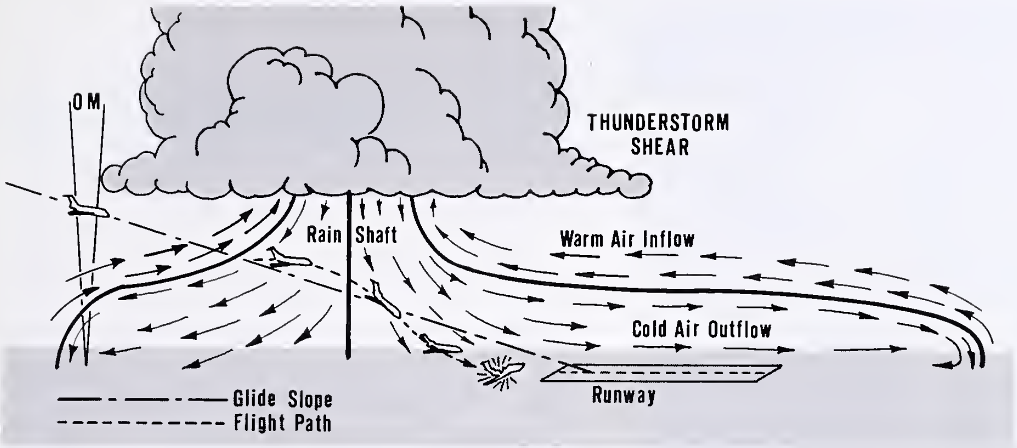


FIGURE 1

More than a few pilots have raced a thunderstorm and landed just before the rain and strong winds reached the field. Although they felt they had once again defied the weather gods, in fact, they had placed themselves right in harms way.

A second type of thunderstorm is a common problem in the western United States: the high based thunderstorm. It can have cloud bases above 8,000 feet AGL. Surface temperatures are usually above 80°F and the temperature-dewpoint spread is greater than 40°F. Rain (called virga) is present, but it evaporates before reaching the ground. That evaporation cools the air and the colder air drops like a rock. A thunderstorm shear situation develops that is both dangerous and hidden.

An airline accident at Denver in August 1975 was due to a high based thunderstorm. Surface winds were light, but after takeoff the aircraft flew into an outflow segment with tailwinds between 60-90 knots. Predictable, a 60-90 knot loss of indicated airspeed at 200 feet AGL caused the aircraft to stall and fall.

FRONTS — Both cold and warm fronts cause wind shears. In fact, frontal shears are the most common type. Here are the key points to remember about fronts and wind shear:

Cold fronts

- Relatively steep slope (but less than 3°)
- Shear will reach 1,000 feet AGL 30 minutes to 1 hour AFTER frontal passage at the field.
- Restricted visibility is behind the front.

Warm fronts

- Relatively shallow slope (about ½°)
- Shear will reach 1,000 feet AGL 6-12 hours BEFORE frontal passage on the surface.
- Restricted visibility is ahead of front.

HIGH WINDS — Strong surface winds with gusts can also cause shears. It's interesting to note that we have been compensating for gusts by adding a speed pad for years. In effect, we have recognized the problem of a wind suddenly stopping — a decreasing headwind. Gusts and wind shears are not exactly the same problem. But for pilot purposes, the analogy should help you relate what you know (gusts) to the problem of a decreasing headwind shear in part three of this series on wind shear.

LOW LEVEL JET — A common occurrence that produces a low level wind shear environment is a nocturnal low level jet. It usually develops above a temperature inversion. The core of the jet may reach speeds of 60-70 knots and vary from 500 to 1500 feet AGL. (40 knots is very common) Usually, there is no turbulence associated with this type of low level jet. Clues to its existence are hard to come by. The jet is a year round phenomena, but it is most frequent in spring or summer. In the CONUS, it commonly occurs in the great plains. The eastern seaboard from North Carolina to Maine is another favorite location.

These are not all of the weather conditions that might cause a shear. Sea breeze and marine inversions, mountain waves, thermals, and probably others can cause a shear. The purpose of this article is to make you aware that shears are common. They can be caused by a variety of weather conditions. Awareness is the first step in coping with wind shear.

One final note about turbulence. Wind shear can exist *without* any turbulence. Don't count on bumpy air as a sure-fire, money back, guaranteed warning device for wind shear. On the other hand, turbulence often indicates a potential shear. Northwest Orient Airlines offers a rule of thumb to its pilots you might find helpful. "If a shear condition exists and the surface winds are 15 knots or higher and gusty, you can expect at least moderate turbulence and an abrupt shear."

Next month: How wind shear affects an aircraft.

PROFESSIONAL PERFORMERS

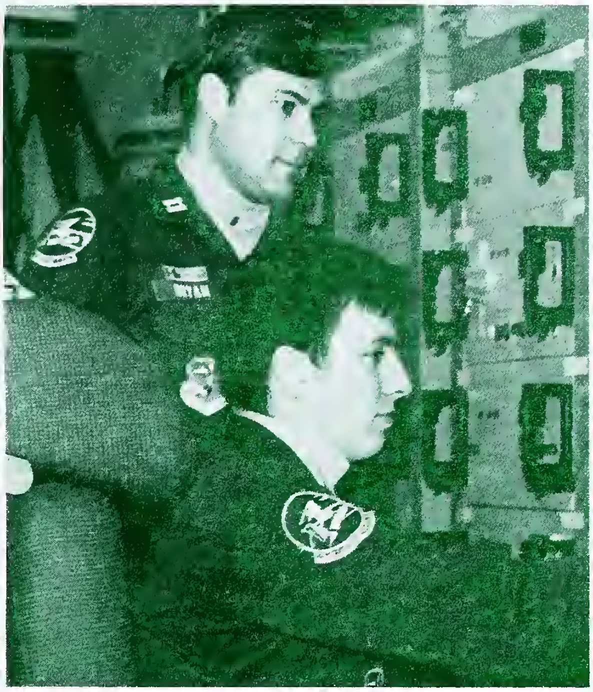
TITAN CREW

During a recent alert, crew E-081 demonstrated technical expertise and ability to perform during stressful situations. While performing Daily Shift Verification (DSV) with a 3901 SMES evaluator, the crew found two pumps cavitating severely, P-103 and P-104. They immediately returned to the LCC to perform trouble analysis for loss of the cooling water system for air conditioning. Trouble analysis directed that the crew place the complex into the Post Attack cooling mode. The complex had previously been in Post Attack for a related problem, so the launch duct temperature was 69°F and the hard water storage tank was extremely hot (107°F). The crew chose to use outside air to cool down the launch duct and keep the tank pressures down below dangerous overpressures. While the second stage pressures did rise dramatically with the loss of the air conditioning system, the quick actions of the crew slowed the rate of temperature increase significantly. This allowed the complex to maintain its combat ready status without off alert time until maintenance could arrive on the site. After maintenance had repaired the system, the complex was taken out of the Post Attack mode during the same day. However, during "midnight walkthrough," the same pumps were found to be cavitating. The crew again went through the same procedures and notified Job Control that Post Attack Mode was being used. Maintenance was dispatched during the early morning hours. Through the efforts of the crew, the launch duct temperature was maintained at 72°F, the water chillers on line, and the tank pressures below off alert limitations.

On the next alert, the crew attempted to cool the hard water storage tank. During this procedure, the cooling water system malfunctioned with the rapid loss of water pressures. The MFT and BMAT, A1C Felipe Montalvo and Dennis Earle backed out of the procedures. After notifying Job Control, the crew and Job Control determined that no further attempts at cooling would be made until the malfunction could be repaired.

On the next alert, the DMCCC and MFT, Lt Mack and A1C Montalvo, found the cooling towers overflowing into the cooling tower pit. They immediately recognized that the isolation valve that regulates the cooling water supply was the problem. After notifying the crew on duty, they rushed below ground to assist in remedying the problem. The two MFTs, were dispatched to the silo to close the faulty valve. The cooling tower was later pumped and the problem corrected. The immediate attention given this problem prevented excessive water loss and damage to the electrical equipment located in the cooling tower pit. On a recent alert, the BMAT and MFT also observed that the water in the pump area was two inches below the platform. While the off-going crew had taken a sump sample, the Ph was not within the allowable range for pumping. During the discussion with Job Control, the MCC, Capt Pinkins, suggested that another sample be taken to verify the previous analysis. The new sump water sample had the proper ph reading and the sump was pumped. The use of correct procedures and the timely actions of the crew alleviated a potentially dangerous situation, the loss of the alert time due to high water in the deflector and the loss of the sump pumps due to high water around the pump motors. On another alert, during the night the crew found the cooling tower pit partially full due to a severe rain storm. The MFT set the circuit breaker to pump the water out of the cooling tower pit. Although it is not normal alert procedures to check the cooling towers during midnight walkthrough, the crew was aware of the extremely heavy rain. The MCCC decided to make a visual check of topside equipment. This action prevented damage to equipment and points out this crew's dedication and professionalism.

532d SMS, McConnell AFB Titan Crew: MCCC Capt Armater Pinkins, DMCCC 1Lt Kervin L. Mack, BMAT A1C Felipe Montalvo, MFT A1C Dennis W. Earle.



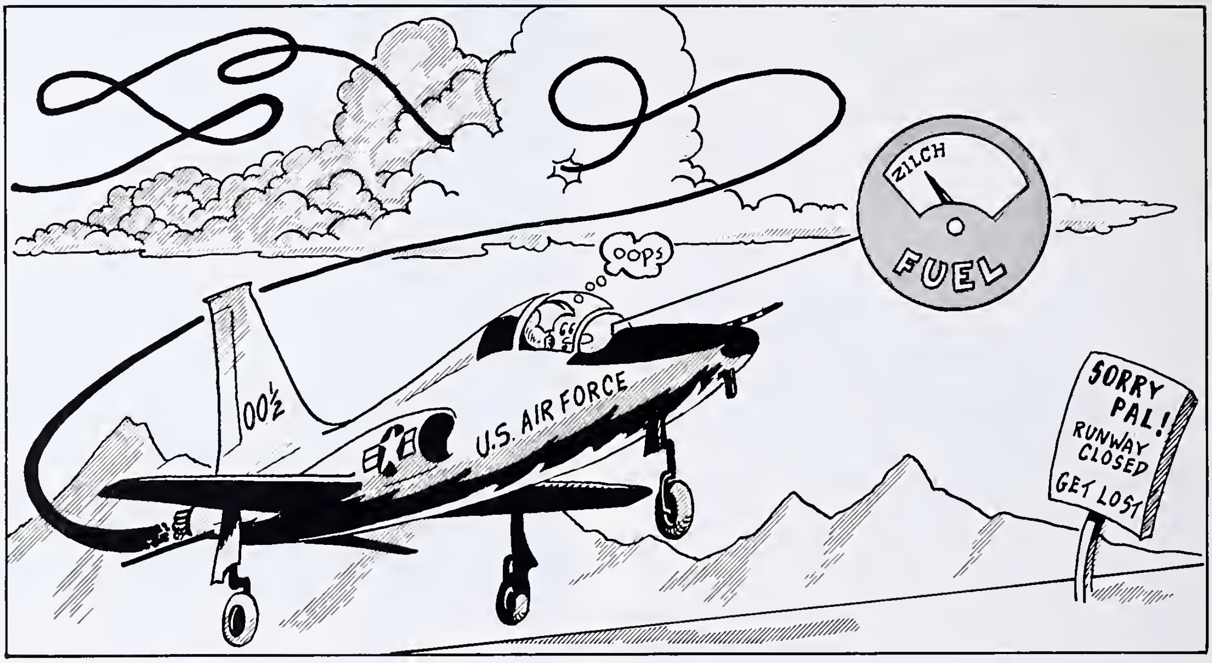
MINUTEMAN CREW

The 44th SMW, Ellsworth AFB Missile Combat Crew S-100, including Capt Joseph T. Bryan, Jr., and 2Lt Ronald A. Pohlen, are named SAC Crew of the Month. Both men have demonstrated on numerous occasions their outstanding ability to perform well under the most trying circumstances and to adapt professionally to any situation. It is this ability and adaptation which was exhibited by the crew while monitoring status within the LCC. The crew noticed that the flight select pushbutton indicator lamps for flight four had burned out. After they replaced the lights and checked for tripped circuit breakers or any other weapon system abnormalities, they proceeded with their duties. Several minutes later, Capt Bryan detected unusual odors. Upon investigation, they noticed that the same light had again burned out and smoke was rising from the alarm monitor panel. The crew first attempted isolation of the fire by pulling the change in status alarm circuit breaker; it had no effect. The crew then pulled the communications panel number one circuit breaker, but smoke continued to emanate from the panel. It was now apparent that complete electrical isolation was required, an action which necessitated transference of the LCC's time slot to its auxiliary LCC. While the commander notified the other LCCs of the problem, the deputy pulled the command control console circuit breaker. Then the crew accomplished time slot transfer procedures. After approximately three to four minutes, the smoke began to dissipate. When they were sure that the fire had been successfully isolated, the crew notified the Ellsworth Command Post and Wing Job Control of the situation and the actions which had been taken. As a result of the crew's sound judgment and decisive action, damage to the LCC was limited to a single component, much more extensive damage was avoided, and no lives were endangered.

MAINTENANCE MAN

TSgt Thomas O. Droelle, 91st SMW Team Training Branch, Minot AFB, is SAC Maintenance Man of the Month. His outstanding technical compliance, initiative, and abilities have been an asset to his unit's overall missile maintenance effort. As Senior Facilities Maintenance Team instructor, he is directly responsible for the preparation of 85 detailed lesson plans covering 310 separate and distinct FMT tasks that were found virtually error-free during consecutive inspections by wing quality control, 3901st SMES, 15AF, and SAC IG teams. All FMT instructors evaluated by the 3901st SMES received "highly qualified" rating, evidence of TSgt Droelle's outstanding leadership skills. Because of his exceptional success with FMT training, his responsibilities have been expanded to include the recurring proficiency training program for the electro-mechanical, site security maintenance, and mechanical maintenance teams in addition to his facility maintenance team training program. His technical skills were demonstrated when he voluntarily agreed to remove and replace several leaking primary power filters. The filters were leaking polychlorinated byphenyls which are both carcinogenic and teratogenic posing severe hazards to the technicians performing the task.

ACE TOPICS


OOPS
ZILCH
FUEL
00½
U.S. AIR FORCE
SORRY PAL! RUNWAY CLOSED GET LOST

The Rest of the Story...

When we write about mishaps, it is not to ridicule pilots, to make light of them or hammer them. It is so we all can learn from their experiences and gain from their judgments and decisions, good or bad, so we all will become better aviators. With that in mind, the story I'm going to tell you will really roll your socks down!

The pilots were quite experienced and held prominent positions within their squadron. The mission was a basic weekend cross-country. When our pilots arrived at their RON destination, they had a little more gas than initially planned, so they decided to beat up the overhead pattern. The local base duty officer who was watching them was a former ATC IP. After observing 13 of their closed patterns he wondered if ATC had changed techniques for flying the T-38. He couldn't remember any requirement to "dust off" the runway prior to a burner closed. For that matter, he couldn't remember burner closed's either!! Anyway, after the show, he called the aircrew's SOF to see what other innovative and exciting things were happening! That's all it took . . .

Shortly after the aircrew returned to their home station, they were "cordially invited" into their squadron commander's office to debrief their mission on that particular day. The crew didn't know the supervisors were interested in what happened on their last leg, so they proceeded to relate the story of their first leg which they felt was a little unusual.

When they arrived at base ops everything looked great. They felt good, the airplane was ready and the weather enroute was super. So off they went to their first destination, a leg of approximately 700 nm.

About an hour after takeoff, prior to descent, center called and asked them if they knew that their destination was still closed and would remain so until well after their planned arrival. The guy who checked NOTAMS hadn't correctly converted the airfield's opening time from ZULU to standard. A cruise climb to FL 490 was the aircrew's next request.

Now came the exercise with the IFR Sup and the Enroute High Altitude Chart. One base was overflown because the Thunderbirds were performing; another passed by because its runway was under repair; a third had only 7500 feet; and a fourth had no JP-4. A couple of Navy bases were passed up because they only had JP-5. Civilian airfields weren't considered that much.

Well, they made it to an air base, logging 2.3 hours and with a total of 120 pounds of fuel remaining. Now you know the rest of the story and by the time they got done the squadron supervisors had forgotten about the 13 burner closed patterns and dusting off the runway.

– Capt Holliker

SAC SAFETY SCREEN

68 BMW, Seymour Johnson Crew E-16: P Capt Kenneth Sprague, CP Capt William R. Prater, RN Capt Gregory W. Schreurs, N 1Lt Carr S. Crammer, EW Capt Wayne R. Shimet, AG SSgt Clarence L. Fowler
68 BMW, Seymour Johnson Crew S-111: IP Capt Danny R. Smith, CP Capt Richard S. Thumser, IN Capt James R. Holaday, IBO SSgt Claude F. Arden
379 BMW, Wurtsmith Crew R-34: P Capt James A.McClure, CP 1Lt George K. Mandis, RN Capt Gregory K. Melton, N Capt Thomas Heffernan, EW 1Lt Timothy I. Q. Wong, G A1C Robert Horton
379 BMW, Wurtsmith Crew R-132: P Capt Clifford M. Wippel, CP 1Lt Thomas L. Lange, N Capt Robert R. Strock, BO A1C Benndrick Watson
19 BMW, Robins Crew E-22: FP Capt Lynn M. Lewis, Jr, CP Capt Robert J. Elder, RN Capt Robert G. Blum, N Capt Neal B. Lewis, EW 1Lt George W. Steele, Jr, G SSgt John C. Avery
19 BMW, Robins Crew E-108: FP Capt Phil Moody, CP Capt Mike Punziano, N Capt Tom Veltri, BO MSgt Eugene Harris
97 BMW, Blytheville Crew E-19: P Capt David A. Brown, Jr, CP Capt David A. Ochsner, CP 1Lt Robert D. Perry, RN Maj Leonard A. Netzer, Jr, NN 1Lt Doyle K. Freeman, EW 1Lt Robert T. Kadechka, AG A1C Stephen S. Wingate
97 BMW, Blytheville Crew E-121: P Capt Thor V. Gunnarsson, CP 1Lt Richard B. Mintz, NN Capt Mark J. May, BO SSgt Michael G. Smith
97 BMW, Blytheville Crew E-124: P Capt Charles R. Johnson, CP 1Lt Randall L. Roth, NN 1Lt Glen Vera, BO SSgt Lewis C. Timbrook
931 AREFG, Grissom AFB (AFRES): P Capt Walter L. Dell, CP Capt Mark D. Cole, N Capt Duane R. Schaefer, BO SMSgt Richard R. McElwain
128 AREFG, Gen Mitchell Fld, (WANG): IP Maj Charles J. Meitz, CP Capt Timothy J. Shannon, N Capt Gary W. Gloede, BO TSgt Raymond A. Bazen
321 SMW, Grand Forks Crew S-110: MCCC Maj Thomas O. Carmichael, DMCCC 1Lt Peter R. Csanady 341 SMW, Malmstrom Crew R-123: MCCC Capt Boyce B. Burley III, DMCCC 2Lt Thomas L. Scoggin
351 SMW, Whiteman Crew R-133: MCCC 1Lt Ares G. Koumis, DMCCC 2Lt Franklin H. Sparks

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW AFR 127-2/SS1.*

*U.S. Government Printing Office
1980—665—145/1

UNIVERSITY OF FLORIDA
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HALL OF FAME

FLARE

TACTICAL FLYING

OVER TWENTY-FOUR YEARS

170 AREFG, McGuire (NJANG)	None

OVER TWENTY-ONE YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	June '58
97 BMW, Blytheville	Aug '58

OVER TWENTY YEARS

940 AREFG, Mather (USAFR)	May '59
307 AREFG, Travis	Sep '59

OVER NINETEEN YEARS

151 AREFG, Salt Lake City (UTANG)	Feb '61

OVER EIGHTEEN YEARS

161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61
134 AREFG, McGhee Tyson (TNANG)	Aug '61
11 SG, Fairford	Feb '62

OVER SEVENTEEN YEARS

340 AREFG, Altus	Jun '62
96 BMW, Dyess	Aug '62

OVER SIXTEEN YEARS

19 BMW, Robins	Aug '63

OVER FIFTEEN YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64

OVER FOURTEEN YEARS

320 BMW, Mather	Jul '65

OVER THIRTEEN YEARS

452 AREFW, March (USAFR)	Sep '66
92 BMW, Fairchild	Feb '67

OVER TWELVE YEARS

55 SRW, Offutt	Jul '67
2 BMW, Barksdale	Aug '67

OVER ELEVEN YEARS

5 BMW, Minot	Feb '69

OVER TEN YEARS

42 BMW, Loring	Sep '69
141 AREFW, Fairchild (WAANG)	Oct '69

OVER NINE YEARS

28 BMW, Ellsworth	May '70

OVER SEVEN YEARS

7 BMW, Carswell	Mar '72
101 AREFW, Bangor (MEANG)	Mar '72
306 SW, Mildenhall	Apr '72
416 BMW, Griffiss	May '72
305 AREFW, Grissom	Aug '72

OVER SIX YEARS

379 BMW, Wurtsmith	Apr '73
931 AREFG, Grissom (USAFR)	Feb '74

OVER FIVE YEARS

384 AREFW, McConnell	Mar '74
189 AREFG, Little Rock (ARANG)	May '74
43 SW, Andersen	Dec '74

OVER FOUR YEARS

68 BMW, Seymour Johnson	Sep '75
6 SW, Eielson	Dec '75

ICBM

OVER FIFTEEN YEARS

1 STRAD, Vandenberg	Sep '64

OVER FOURTEEN YEARS

308 SMW, Little Rock	Aug '65

OVER NINE YEARS

341 SMW, Malmstrom	Apr '70

OVER SIX YEARS

390 SMW, Davis-Monthan	Jul '73

OVER FIVE YEARS

351 SMW, Whiteman	Oct '74
91 SMW, Minot	Nov '74

OVER FOUR YEARS

321 SMW, Grand Forks	Feb '76

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.